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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,101	09/26/2003	Ken Gary Pomaranski	200311114-1	7111

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EXAMINER
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CRIBBS, MALCOLM D

ART UNIT	PAPER NUMBER
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2115

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/672,101

Applicant(s)

POMARANSKI ET AL.

Examiner

Malcolm D. Cribbs

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 5-21 is/are rejected.
- 7) ☒ Claim(s) 3 and 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/25/03</u>  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

**Claims 1-21 are presented for examination.**

5 ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

10 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Lacombe et al [Patent No. US 6,055,647].

15 **As per claim 1**, Lacombe teaches the invention comprising:  
tracking a number of power supply units, n, that are presently in an up state [Col 5 line 63 – Col 6 line 1; and Col 6 lines 63-66; wherein the presence line is used to presence of the power supplies supplying power thus tracking the number of power  
20 supply units in an up state];

determining dynamically a number of power supply units, N, that are presently needed to supply power to the system [Col 6 lines 60-62; wherein power supply redundancy, the power supply needed to supply power to the system based on the load, is dynamically calculated when the load of the system changes, wherein the power  
25 supplied is directly proportionate to the number of power supplies]; and

generating an action alert to increase a margin of safety corresponding to a difference between n and N if the margin of safety reaches a minimum acceptable level [Col 8 lines 41-44, and Col 8 line 53 – Col 9 line 7; wherein an alert [indication to the user] is generated if the power supply redundancy is less than an acceptable margin of safety [a selected threshold]].

**As per claim 21**, it is directed to the means to implement the method of steps as set forth in claim 1. Therefore, it is rejected on the same basis as set forth hereinabove.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lacombe et al [Patent No. US 6,055,647] in view of Cornelius [Publication No. US 2006/0123256] in further view of Kinnard et al [Publication No. US 2004/0179334].

**As per claim 2**, Lacombe's teachings have been discussed above of dynamically reconfiguring power supply redundancy due to load changes of a system; Lacombe does not teach a method of using current to determine the number of power supply units that are needed to supply power to the system.

Cornelius discloses another method of managing power supplied to a system due to a load change. Cornelius teaches a method of using current drawn, measured by a current sensor, by the system to determine the power level that will compensate for the needs of the system [Page 1, paragraph [0008]]. Thus, Cornelius discloses utilizing the current measurement data in the determination of N, which is the number of power supply units need to supply power to the system wherein it would have been obvious to one of ordinary skill in the art to calculate needed power using current drawn.

It would have been obvious to one of ordinary skill of the art to combine the teachings of Lacombe and Cornelius because they both teach a method of adapting to load changes of a system. However, Cornelius covers the deficiency of Lacombe by providing a consistent voltage level during a change of load in the system.

**Claims 3 and 4** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**As per claims 5 and 13**, Lacombe in view of Cornelius do not disclose a method of using supply state tracking registers coupled to the power supply units. Lacombe teaches a method of tracking power supply units using a presence line.

Kinnard teaches a method of controlling power supplies of a redundant system. Kinnard discloses a method of tracking the operational state of power supplies using supply state tracking registers [Page 1, paragraph [0017]]. Thus, it would have been obvious to one of ordinary skill in the art to track the state of redundant power supplies using state tracking registers.

It would have been obvious to one of the ordinary skill of the art to combine the teachings of Lacombe and Kinnard because they both teach a method of controlling power supplies of a redundant power supply system. However, Kinnard covers the deficiency of Lacombe by teaching a method of safely hot-swapping a power supply when the power supply is not providing sufficient power.

**As per claims 6, and 7**, wherein the minimum acceptable level for the margin of safety comprises zero or more than zero units [it would be inherent to one of ordinary skill in the art of redundant power supplies to configure the safety of the power supplies depending on the application which can include any amount of redundancy or safety].

**As per claim 8**, Kinnard discloses a method of hot-swapping a power supply to replace it with a sufficient power supply.

**As per claim 9**, wherein the action taken comprises cold swapping of a failed component [it would be inherent to one of ordinary skill in the art of redundant power supplies to replace a failed component by cold swapping].

5       **As per claim 10**, Lacombe discloses the invention comprising determining an initial value of N at design time based on expected power needs of the system [Col 3, lines 39-46].

10       **As per claim 11**, Lacombe discloses the invention comprising configuring the system with an initial margin of safety [Col 3, lines 39-46].

**As per claim 12**, an apparatus for providing power redundantly to a system, the apparatus comprising:

15       a plurality of power supply units configured to provide power to the system [Lacombe, Fig. 1, characters 14];

at least one current sensor for measuring an electrical current drawn by the system [Cornelius, Page 1, paragraph [0008]; wherein the current detector measures the current drawn by the system, as taught above];

20       a power-consumption tracking unit couples to the at least one current sensor [Lacombe, ASIC; Col 5 line 63 – Col 6 line 13 ]; and

supply state tracking registers coupled to the power supply units and configured to hold a state variable for each supply unit [Kinnard, Fig. 1, character 120; Page 1, paragraph 17].

**As per claims 14, and 15,** refer to the rejection of claim 1 as it has been previously discussed.

**As per claim 16,** Lacombe discloses the invention comprising an output bus bar  
5 is coupled to the multiple power supply units [Fig. 1, character 16].

**As per claim 17,** wherein the current sensor comprises a device coupled to the output bus bar [it would have been inherent to one of ordinary skill in the art wherein the current sensor must be coupled to the output bus bar to measure the current drawn  
10 from the system].

**As per claims 18 and 19,** wherein the device comprises an in-line current measuring device [it would be inherent to include an in-line or passive current measuring device to measure the current drawn by the system as known in the art  
15 [Page 2, paragraph 0025 lines 26-29]].

**As per claim 20,** it would have been obvious to one of ordinary skill in the art to integrate the current sensors with the power supply units to provide individual sensors for each unit.




**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Malcolm D. Cribbs whose telephone number is 571-272-5689. The examiner can normally be reached on M-F 8AM-430PM.

5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for  
10 published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a  
15 USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Malcolm D Cribbs  
Examiner  
Art Unit 2115



20 March 15, 2007  
MC